

## The Application of Hydrotherapy (Soaking Feet in Warm Water) Against Pain Reduction in Ny J's Clients with Hypertension

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### Abstract

Currently, hypertension is considered a global public health problem in the last few decades. Hypertension causes the heart muscle to thicken (hypertrophy) and results in its function as a pump being disrupted and its contractions reduced. Apart from that, it also causes damage to blood vessels in the brain, eyes (retinopathy) and/or kidneys (kidney failure). The initial symptoms that often appear in people with hypertension are headaches, usually in the nape and neck. Headaches are caused by increased blood pressure resulting in a decrease in oxygen to the brain which results in anaerobic metabolism and produces lactic acid and ultimately stimulates pain stimuli. There are many efforts that can be made to reduce hypertension, one of which is non-pharmacological in the form of Hydrotherapy (Warm Water Foot Soak) intervention. The aim of this research is to determine the effectiveness of the Application of Hydrotherapy (Warm Water Foot Soak) in Reducing Pain in Nursing Care with Hypertension Cases. Using a qualitative descriptive method in the form of a study cases using a research approach in the form of the nursing care process. The results obtained after implementing Hydrotherapy (Warm Water Foot Soak) for 3 x 24 hours, the client's pain complaints decreased, the client's high blood pressure decreased and the client looked calm. The conclusion based on the case evaluation was that Hydrotherapy (Warm Water Foot Soak) was effective for use as a nursing care intervention for hypertension sufferers.

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## 1. INTRODUCTION

Currently hypertension is considered a global public health problem in the last few decades. Hypertension shows an increasing trend due to lifestyle changes (Ghods et al. 2014) and is also caused by genetic factors (Ismael et al. 2022; Southgate et al. 2020). Hypertension is one of the cardiovascular diseases that causes premature death throughout the world (Sudayasa et al. 2020) because many sufferers are still unaware of the symptoms they cause and only realize it when a disturbance occurs in the body (Lukitaningtyas, D., & Cahyono 2023).

Therefore, hypertension is often said to be able to kill the sufferer silently or is called *silent wedges*, because this disease does not have specific symptoms (Loscalzo et al. 2022). This condition generally rarely causes symptoms and is often unnoticed.

According to data from the World Health Organization (WHO), in 2018 around the world around 972 million or 26.4% were diagnosed with hypertension. In Indonesia, the estimated number of hypertension cases is 63,309,620. Hypertension occurs in the age group 31-44 years (31.6%), age 45-54 years (45.3%), age 55-64 years (55.2%) (Astutik and Mariyam 2021). In Indonesia there is no accurate data regarding hypertension but there have been methodological studies carried out in different ways (Sihotang 2021).

From the research results, it can be estimated that sufferers of high blood pressure in the population aged over 20 years are 1.8 -8.6%. Most research results state 8.6 -10%. From this data it is clear that Indonesia also has a prevalence of high blood pressure which is a national health problem (Risksda, 2018). The number of hypertension sufferers in Indonesia is quite worrying (Prihatini, N. W., & Nopriani, Y (2023).

If not taken seriously, the lifespan of hypertension sufferers can be shortened by 10-20 years (Saputri and Maulidya 2022). Hypertension causes the heart muscle to thicken (hypertrophy) and results in its function as a pump being disrupted and its contractions reduced (Himawati 2021) Apart from that, it also causes damage. blood vessels in the brain, eyes (retinopathy) and/or kidneys (kidney failure) (Anam 2016).

The initial symptom that often appears in hypertension sufferers is headache, usually in the nape and neck (Rahmanti and Pamungkas 2022). Headaches are caused by an increase in blood pressure resulting in a decrease in oxygen to the brain which results in anaerobic metabolism and produces lactic acid and ultimately stimulates pain stimuli (Surya and Yusri 2022).

Pain management is divided into two, namely pharmacological and non-pharmacological (Widianti 2022). Data pharmacological therapy is carried out by administering drugs such as administering analgesic drugs or anti-pain drugs (Wulan and Apriliyasari 2020), while non-pharmacological therapy is therapy other than administering drugs. medicine and does not cause harmful effects (Rahayu et al. 2022)

Hypertension can be treated pharmacologically, namely with antihypertensive drugs or non-pharmacologically, namely by modifying lifestyle or it can also be a combination of both to get a better treatment effect (Handayani et al. 2023).

Several studies have proven that non-pharmacological treatment is a mandatory intervention that must be carried out in every treatment for hypertension (Arafah et al. 2022). One non-pharmacological treatment that can be done is by changing to a healthier lifestyle and doing therapy with foot soaks. using warm water (Blood 2017). This therapy can be given to hypertension sufferers but not as the only treatment but as a companion therapy (Biahimo 2020)

Hydrotherapy is a method of using water to improve blood circulation and quality. This is important because blood supplies nutrients and removes waste from tissues and organs. If circulation is deficient or slow, healing nutrients cannot be provided and toxins cannot be removed, leading to tissue and organ degeneration (Chowdhury et al. 2021). Soaking the feet in warm water is the application of heat to the body to reduce the symptoms of acute and chronic pain ( Putri and Yulianti 2017).

## **2. RESEARCH METHOD**

The research method used in this research is a qualitative descriptive method in the form of a case study. This case management was carried out for 4 days starting from 29 November 2023 to 02 December 2023. The researcher carried out a research approach using the nursing care process approach, which includes the assessment stage, establishing a nursing diagnosis, nursing planning, nursing implementation, and nursing evaluation.

At the assessment stage, the researcher conducted interviews to obtain information from the client regarding the history of the disease, symptoms felt and other trigger factors related to the client's clinical condition. A physical examination was also carried out by the researcher to evaluate the client's physical condition directly. The results obtained from this stage The assessment is used as a reference for preparing a nursing plan, where in this case the nursing plan used is a non-pharmacological technique in the form of applying the hydrotherapy method (Warm Water Foot Soak). The implementation of hydrotherapy (Warm Water Foot Soak) is carried out in accordance with standard operating procedures (SOP) During the implementation process, nurses monitor the client's response to the intervention provided to make it easier for researchers to evaluate the effectiveness of implementing the intervention provided to reduce pain in hypertensive clients.

## **3. RESEARCH RESULTS AND DISCUSSION**

### **3.1. Identifying Pain Before Giving Non-Pharmacological Hydrotherapy Techniques (Warm Water Foot Soak) to Mrs J Clients with Hypertension**

Based on the assessment data, it shows that the patient is 60 years old with the main complaint of headaches, frequent awakenings during sleep, and increased blood pressure. Physical examination revealed that the consciousness was composmentis, GCS 4-5-6, pain scale 5 (VAS scale), the patient said the pain increased if there was too much activity, pain in the back of the head, the pain felt intermittent and came and went, vital signs: 150/80 mmHg, pulse: 90 x/minute, temperature: 36.5°C, breathing 20 x/minute, weight 45 kg and height 150 cm. Hypertension or high blood pressure is an abnormal increase in blood pressure in the blood vessels arteries continuously over a period (Surahmawati and Novitayanti 2021).

A person is considered to have hypertension if their blood pressure is more than 140/90 mmHg (Pristiyani and Mujahid 2020).

Headache in the nape and neck is an early symptom that often appears in hypertension sufferers (Rahmanti and Pamungkas 2022). Headaches are caused by an increase in blood pressure resulting in a decrease in oxygen to the brain which results in anaerobic metabolism and produces lactic acid and ultimately stimulates pain stimuli (Surya and Yusri 2022).

Based on the data from the assessment, the intervention that will be given to clients with a nursing diagnosis of acute pain related to physical injury agents is characterized by major signs of grimacing and difficulty sleeping, while minor signs of increased blood pressure are pain management (I.08238) by providing non-invasive techniques. pharmacological to reduce pain in the form of a hydrotherapy technique (warm water foot soak). Where the expected goal after nursing action is carried out for 1 x 24 hours is that the level of pain decreases, with the result criteria being complaints of decreased pain, decreased grimaces, decreased difficulty sleeping and improved blood pressure.

The author is of the opinion that from the case above there are signs and symptoms that support the nursing diagnosis made, including the client not grimacing, complaining of pain and frequently waking up during sleep and increased blood pressure.

### **3.2. Identifying Pain After Being Given Non-Pharmacological Hydrotherapy Techniques (Warm Water Foot Soak) to Mrs J Clients with Hypertension**

Based on the data above, the intervention that will be given to reduce pain in hypertensive patients is Hydrotherapy (Soaking Feet in Warm Water).

Acute pain is an unpleasant sensory and emotional experience that arises due to actual or functional tissue damage, suddenly or slowly, with mild to severe intensity that can last for less than 3 months (Syarah 2022).

Hydrotherapy is a treatment method using water to treat disease or relieve painful conditions (Dilianti, I. E., & Candrawati, E 2017). Warm water foot soak therapy is therapy by soaking the feet to a limit of 10-15 cm above the ankles using warm water (Parmana and Siringoringo 2020).

Hydrotherapy (Warm Water Foot Soak) is performed on the client sitting in a chair. Hydrotherapy (Warm Water Foot Soak) is done with a water temperature of 40<sup>th</sup>C for a period of 30 minutes. After soaking, the client's feet are lifted and then dried with a towel. (Malaibel 2020).

When therapy is carried out, clients become more relaxed and do not often complain of pain. In line with research conducted by Khoirunnisa, M. A., & Nurjayanti, I. (2023) stated that the results of reducing pain were obtained after using the technique of soaking the feet in warm water. Alvaredo, M. K., Triyoso, T., & Zainaro, M. A. (2022) in their research also explains that non-pharmacological therapy of warm water foot

soaking and massage has been proven to reduce hypertension and overcome nursing problems, pain and discomfort. Soaking the feet in warm water with a temperature of 37°C-39°C is useful in reducing muscle contractions, thereby causing a feeling of relaxation (Candra Wahyuni 2016) .

This is in accordance with the theory that, Soaking the feet in warm water is the application of heat to the body to reduce symptoms of acute and chronic pain (Endah 2023). This therapy is effective for reducing pain related to muscle tension although it can also be used to treat hormonal problems and smooth blood circulation. Traditional Chinese Medicine calls the feet the second heart of the human body, a barometer that reflects the body's health condition. There are many acupuncture points on the soles of the feet. Includes six meridians, namely (liver, bile, bladder, kidney, spleen and stomach) in the feet (Alvaredo, Triyoso, and Zainaro 2022).

The author is of the opinion that the nursing actions given to the patient's condition are appropriate and are expected to achieve the outcome criteria, namely decreased pain.

### **3.3. Evaluate the application of Hydrotherapy (Warm Water Foot Soak) for pain in Mrs J clients with hypertension**

Evaluation regarding the provision of hydrotherapy (Warm Water Foot Soak) To reduce pain, it includes process evaluation and results evaluation.

After carrying out hydrotherapy (warm water foot soak) for 3 implementations, the results obtained were that the client experienced a decrease in the level of pain periodically. The assessment of the decrease in the level of pain was carried out using the Visual Analog Scale (VAS), the results obtained were that the pain level was in the moderate category, scale 1 and Vital signs: 120/80 mmHg, pulse: 85 x/minute, temperature: 36°C, breathing 20 x/minute.

The results of applying this therapy are in line with research conducted by Manetde, S. E. (2023) which states if providing an innovative foot soak technique using warm water resulted in a reduction in the pain scale in hypertensive patients, namely to a scale of 1-2 (mild) from a scale of 5 (moderate), the patient said he felt comfortable, calm and relaxed. Other research was also carried out by Wicaksono, G. (2019) explains that there was a decrease in pain levels in hypertension sufferers after warm water foot soak therapy.

The results of other research were also conducted by (Astutik, M. F., & Mariyam, M. 2021) which showed that the working mechanism of warm water foot soak therapy increases blood circulation by widening blood vessels so that oxygen enters the tissues and can reduce tension. If warm water foot soaking is done regularly, changes in blood pressure can occur because the effect of soaking feet in warm water produces heat energy. which dilates and improves blood circulation and also stimulates the nerves in the feet to activate the parasympathetic nerves, causing changes in blood pressure.

Thus, studies This shows that the application of warm water foot soak therapy is an intervention that can be used by community nurses. Because this action is very easy to do both independently and with help of others.

## **4. CONCLUSION**

Based on the results of the research and discussion, it can be concluded as follows: Providing hydrotherapy intervention (warm water foot soak) has been proven to be effective in reducing the level of pain in cases of hypertension. This was proven after implementing it on Mrs J for 3 meetings with a decrease in the pain scale from 5 to 1 with an assessment based on VAS (Visual Analog Scale).

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